United States Patent [19]

DiSanto et al.

[11] **Patent Number: 4,655,897**

[45] **Date of Patent: Apr. 7, 1987**

[54] **ELECTROPHORETIC DISPLAY PANELS AND ASSOCIATED METHODS**

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[21] Appl. No.: **670,571**

[22] Filed: **Nov. 13, 1984**

[51] **Int. Cl.**[4] **G03G 15/00**

[52] **U.S. Cl.** ..... **204/299 R**; 350/267; 350/362; 355/3 R

[58] **Field of Search** ..... 204/180 R, 299 R; 350/267, 362; 355/3 R

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[57] **ABSTRACT**

There is disclosed an electrophoretic display apparatus which includes a planar transparent member having disposed on a surface a plurality of vertical conductive lines to form a grid of lines in the Y direction. On top of the grid of vertical lines there is disposed a plurality of horizontal lines which are positioned above the vertical lines and insulated therefrom by a thin insulating layer at each of the intersection points. Spaced above the horizontal and vertical line pattern is a conductive plate. The space between the conductive plate and the X and Y line patterns is filled with an electrophoretic dispersion containing chargeable pigment particles. When a voltage is impressed between the X and Y lines, pigment particles which are located in wells or depressions between the X and Y pattern are caused to migrate towards the conductive plate and are deposited upon the conductive layer in accordance with the bias applied to the X and Y line conductors. There is described an electrophoretic dispersion suitable for operation with the display as well as techniques for fabricating the display. In this manner the displays can be fabricated to contain large effective display surfaces while being relatively thin and which are capable of high resolution at relatively low power.

14 Claims, 9 Drawing Figures